

David Mohaisen

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Education

University of Minnesota, Minneapolis, MN, USA

Ph.D., Computer Science 08/2012

Advisor: Yongdae Kim

M.Sc., Computer Science 08/2011

Inha University, Incheon, Republic of Korea

M.Sc., Computer Engineering 08/2007

Research Interests

Current: Internet of Things Security; Machine Learning Security; Blockchain Systems Security.

Earlier: Critical Infrastructure Security; Software Systems Security; Social Computing Systems.

Academic and Professional Appointments

University of Central Florida, Orlando, FL, USA

Associate Professor, Computer Science 08/2017–

Associate Professor, Cyber Security and Privacy Cluster 08/2017–

Associate Professor, Computer Engineering 08/2017–

University at Buffalo, SUNY, Buffalo, NY, USA

Assistant Professor, Computer Science 08/2015–08/2017

US Air Force Research Laboratory, Rome, NY, USA

Visiting Professor, Cyber Assurance Branch 05/2018–07/2018

Visiting Professor, Cyber Assurance Branch 05/2017–07/2017

Faculty Fellow, Cyber Assurance Branch 05/2016–07/2016

Georgia Institute of Technology, Atlanta, GA, USA

Visiting Researcher, Computer Engineering 03/2017–07/2017

Verisign Inc., Reston, VA, USA

Senior Research Scientist, Verisign Labs 04/2014–08/2015

Research Scientist, Verisign Labs 09/2012–03/2014

Huawei Technologies USA, Inc., Santa Clara, CA, USA

Visiting Researcher (Intern), Huawei Innovation Center 05/2012–08/2012

International Computer Science Institute, Berkeley, CA, USA

Research Intern, Networking and Security 05/2011–08/2011

Electronics and Telecom Research Institute, Daejeon, Republic of Korea

Researcher, Security Research Division 08/2005–08/2009

Awards and Honors

ACM Distinguished Speaker 2021

IEEE Distinguished Visitor (Computer Society) 2021

Best Paper Award, IEEE Systems Journal (top 1%) 2020

Distinguished TPC Member, IEEE INFOCOM 2020

Best paper – runner up award, IEEE DSC (top 3%) 2019

Distinguished TPC Member, IEEE INFOCOM 2019

Best Paper Award, ACM DLoT 2018

Senior Member Elevation, Association for Computing Machinery (ACM) 2018

Distinguished TPC Member, IEEE INFOCOM 2018

Best Student Paper Award, IEEE ICDCS (top 1%) 2017

Distinguished TPC Member, IEEE INFOCOM 2017

Visiting Faculty Research Award, US Air Force Laboratory 2017

Recognition for Service, IEEE CNS 2016

Summer Faculty Fellowship Award, US Air Force Laboratory	2016
Senior Member, Institute of Electrical and Electronics Engineers (IEEE)	2015
Best Paper Award, WISA (fast-tracked to Computer & Security)	2014
Best Poster Award, IEEE CNS	2013
Doctoral Dissertation Fellowship, University of Minnesota	2011
Dean's Award for Outstanding Thesis, Inha University	2007
Jungseok International Fellowship, Inha University	2005

External Competitive Grants

- [1] (co-PI; share: 20%) "SFS: New: CyberCorps Scholarship for Service at the University of Central Florida", National Science Foundation. 07/01/2021 – 06/30/2026. (Funded amount: **\$2,286,084**). Recommended.
- [2] (PI; share: 100%) "Big data approach to security: phase 2" National Research Foundation (Korea). 03/01/2020–06/30/2022. (Funded amount: **\$704,122**; includes \$248,461 of in-kind matching.)
- [3] (PI; share: 50%) "Multi-Layer and Systematic Analytics for Securing the Internet-of-Things". Cyber-Florida Seed Grants. (co-PI: My T. Thai at UF). 07/01/2020—6/30/2021 (Funded amount: **\$75,000**)
- [4] (Senior Personnel; share: 5%) "Future Healthcare Technologies and Multidisciplinary Workforce Readiness". (PI: Sang-Eun Song), 10/01/2020–09/30/2021 (Funded amount: **\$150,000**)
- [5] (PI; share: 100%) "Big data approach to security." National Research Foundation (Korea). 07/1/2017–28/02/2020. (Funded amount: **\$1,095,723**; includes \$519,674 of in-kind matching.)
- [6] (PI; share: 50%): "Towards Understanding the Attack Vector of Privacy Technologies". National Science Foundation (NSF), 2016–2019 (Funded amount: **\$250,000**; w/ Guevara Noubir).
- [7] (PI; share: 50%) "Thwarting Advanced Persistent Threats in the Internet of Things". Florida Cybersecurity Center (FC2) Seed Grants (co-PI: My T. Thai). 2018–2019 (Funded amount: **\$70,000**)
- [8] (co-PI; share: 50%) "Building Mobile Computing Security Capacity". Florida Cybersecurity Center (FC2) Capacity building (PI: Karim Elish). 2018–2019 (Funded amount: **\$73,000**)
- [9] (PI; share: 100%) "Analyzing the blockchain system attack surface". US Air Force Research Laboratory. 04/01/2018–10/30/2019 (Funded amount: **\$154,000**)
- [10] (PI; share: 100%) "Data Provenance Assurance in Cloud Using Block Chain". US Air Force Research Laboratory. 2017–2018 (Funded amount: **\$100,000**)
- [11] (PI; share: 100%) "Big data approach to ddos attacks and defenses." National Research Foundation. 2016–2017 (Funded amount: **\$250,000**).
- [12] (PI, share: 100%) "Thwarting APTs in IoT". US AFRL. 2017 (Funded amount: **\$15,000**).
- [13] (PI, share: 100%) "QoI for assessing information sharing". US AFRL. 2016 (Funded amount: **\$10,000**)
- [14] (PI, share: 100%) "Privacy preserving threat intelligence". US AFOSR. 2016 (Funded amount: **\$14,800**)

Other Grants/Awards

- [1] (PI; share: 100%) "Understanding the interplay between privacy policies and security of healthcare". UCF's ORC Faculty Mentoring Program (Mentee: Sung Choi). 2020-2021 (**\$3,000**)
- [2] (PI; share: 100%) UCF's ORC Fellowship (GRA Support). ORC. 2020–2021 (**\$35,000**)
- [3] (PI; share: 100%) Funds to support 50% FTE of GRA for A. Alabduljabbar. Saudi Arabian Cultural Mission (Washington, D.C.). 2019–2022 (**\$138,771**)
- [4] (PI; share: 33%) ACM Co"NEXT 2019 Sponsorship. Office of Research and Commercialization (co-PIs: Murat Yuksel, Damla Turgut). 2019–2020 (**\$2,000**).
- [5] (PI; share: 100%) "Learning-based Malware Analysis". NVIDIA GPU Grants. 2019 (EV: **\$6,000**)
- [6] (PI; share: 100%) Funds to support Sultan Alshamrani (50% FTE). Saudi Arabian Cultural Mission (Washington, D.C.). 2018–2021 (**\$138,771**)
- [7] (PI; share: 100%) UCF's ORC Fellowship (GRA Support). ORC. 2018–2019 (**\$35,000**)
- [8] (PI; share: 100%) Funds to support Hisham Alasmari (50% FTE). Saudi Arabian Cultural Mission (Washington, D.C.). 2017–2020 (**\$138,771**)

- [9] (PI; share: 100%) GPU-aided malware classification. NVIDIA GPU Grants. 2017. (EV: **\$2,000**)
- [10] (PI; share: 100%) Travel Support for IEEE CNS 2016. National Science Foundation. 2016 (**\$10,000**).

Graduated Doctoral Students

- [1] **RhongHo Jang**, Computer Science, University of Central Florida 08/2020
First Job: Tenure-track Assistant Professor, Wayne State University
- [2] **Mohammed Abuhamad**, Computer Science, University of Central Florida 08/2020
First Job: Tenure-track Assistant Professor, Loyola University, Chicago
- [3] **Jeman Park**, Computer Science, University of Central Florida 08/2020
First Job: Postdoctoral Researcher, Georgia Institute of Technology
- [4] **Jinchun Choi**, Computer Science, University of Central Florida 08/2020
First Job: Postdoctoral Researcher, Texas A&M University
- [5] **Hisham Alasmary**, Computer Science, University of Central Florida 03/2020
First Job: Tenure-track Assistant Professor, King Khalid University
- [6] **Ashar Ahmad**, Computer Science, University of Central Florida 12/2019
First Job: Director of Research and Engineering, Clear Village Inc.
- [7] **Jeffrey Spaulding**, Computer Science, University of Central Florida 08/2018
First Job: Tenure-track Assistant Professor, Niagara University

Current Doctoral Students

- [8] **Muhammad Saad**, Ph.D. Candidate (CS). Passed Qual: 2018; Candidacy: 2019; Proposal: 2020
- [9] **Afsah Anwar**, Ph.D. Candidate (CS); Passed Qual: 2018; Candidacy: 2020
- [10] **Sultan Alshamrani**, Ph.D. Candidate (CS). Passed Qual: 2019; Candidacy: 2020
- [11] **Ahmad Abusnaina**, Ph.D. Student (CS). Passed Qual: 2019
- [12] **Ulku Meteriz**, Ph.D. Student (CS). Passed Qual: 2019.
- [13] **Abdulrahman Alabduljabbar**, Ph.D. Student (CS).
- [14] **Mohammed Al-Kinooon**, Ph.D. Student (CS).
- [15] **Ran Gedawi**, Ph.D. Student (CS).

Hosted Postdocs

- [1] **Omar Al-Ibrahim (2016–2017)**, (Ph.D. from Southern Methodist University; Dallas, TX)
Placement: Tenure-Track Assistant Professor, Kuwait University
- [2] **Ah Reum Kang (2016–2017)**, (Ph.D. from Korea University; South Korea)
Placement: Tenure-Track Assistant Professor, Soonchunhyang University.

Doctoral Dissertation Committee

- [1] **Hayreddin Ceker**, University at Buffalo (Ph.D., CS, 2017).
- [2] **An Wang**, George Mason University (Ph.D., CS, 2018)
- [3] **Amirali Sanatinia**, Northeastern University (Ph.D., CS, 2018)
- [4] **Hossein Rezaeighaleh**, University of Central Florida (Ph.D., CS, 2020)
- [5] **Mazen Alwadi**, University of Central Florida (Ph.D., ECE, 2020)

Visitors

- [1] **Dr. Mohammed Alghamdi**, Visitor (summer 2019). Associate Professor at Um Alqura University
- [2] **Dr. DaeHun Nyang**, visitor (2017-2019, multiple visits). Professor at Ewha Womans University
- [3] **Dr. Jihoon Lee**, visitor (2019; 1 year). Associate Professor at Sangmyung University
- [4] **Mr. Anho Lee**, Visitor (2020; 3 months). Korea University (now at Seoul National University)

Masters Students (Completed)

- [1] **Necip Yildiran**, Computer Science, University of Central Florida, 2018–2020
- [2] **Priyanka Gona**, Computer Science, University of Central Florida, 2019-2020.
- [3] **Samprati Upadhyay**, Computer Science, University of Central Florida, 2019-2020.
- [4] **Amin Khormali**, Computer Science, University of Central Florida, 2017-2019
- [5] **Victor Cook**, Computer Science, University of Central Florida, 2017
- [6] **Jesse Freeman**, (SFS), Computer Science, UB, SUNY, 2016. Now: Specialist, U.S. DoD.
- [7] **Christopher Weeden**, (SFS), Computer Science, UB, SUNY, 2016. Now: Scientist, U.S. Navy
- [8] **Woodams Clark**, (SFS), Computer Science, UB, SUNY, 2016. Now: Scientist, U.S. Navy
- [9] **Joseph D’Amato**, (SFS), Computer Science, UB, SUNY, 2016. Now: Scientist, MITRE
- [10] **Pranav Jain**, Computer Science, UB, SUNY, 2016–2017. Now: Security Engineer, Qualcomm
- [11] **Jayneesh Wanjara**, Computer Science, University at Buffalo, SUNY, 2016.

Undergraduate Students (Completed)

- [1] **Gianni Lotz**, Computer Science (UGRA), University of Central Florida, 2019
- [2] **Mikal Young**, Computer Science (UGRA), University of Central Florida, 2019
- [3] **Connor Austin**, Computer Science (UGRA), University of Central Florida, 2018–2019
- [4] **Coty Toggle**, Computer Science (UGRA), University of Central Florida, 2018–2019
- [5] **Destinee Stephen**, Computer Science (UGRA), University of Central Florida, 2018–2019
- [6] **Brandon Gray**, Computer Science (UGRA), University of Central Florida, 2017-2018
- [7] **Shane Ferrell**, Computer Science (UGRA), University of Central Florida, 2017
- [8] **Brent Rademaker**, Computer Science (UGRA), University of Central Florida, 2017
- [9] **Jobin Joseph**, Computer Science (UGRA), University at Buffalo, SUNY, 2016
- [10] **David Weidenborner**, Computer Science (UGRA), University at Buffalo, SUNY, 2016

Publications

Per Google Scholar, my research publications received more than 3,300 citations (h-index=30 and i10-index=82). Acceptance rate (AR). Journals I published frequently are considered top in their respective fields, including IEEE TMC, TIFS, TDSC, TC, TKDE, etc. Authored under Aziz Mohaisen (2006–2019) and David Mohaisen (2019-onwards). * indicates a student author I advised.

Book Chapters and Standard Documents

- [1] Andreas Huelsing, Denis Butin, Stefan-Lukas Gazdag, and David Mohaisen. “XMSS: Extended Hash-Based Signatures”. RFC 8391; May 14, 2018.
- [2] Muhammad Saad*, Charles Kamhoua, Laurent Njilla, Kevin Kwait, David Mohaisen “Shocking Bitcoin’s Memory with Unconfirmed Transactions: New DDoS Attacks and Countermeasures”. 2020, in “Blockchain for Distributed Systems.” IEEE Press.
- [3] Muhammad Saad*, Jeffrey Spaulding*, Charles Kamhoua, Laurent Njilla, DaeHun Nyang, and David Mohaisen. “Exploring the Attack Surface of Blockchain”. To appear (2019), in “Blockchain for Distributed Systems.” IEEE Press.
- [4] Hisham Alasmay*, Afsah Anwar*, Laurent Njilla, Charles A. Kamhoua, David Mohaisen, “Addressing Polymorphic Advanced Threats in Internet of Things Networks by Cross-Layer Profiling”, Book Chapter, to appear (2019), in “Modeling and Design of Secure Internet of Things”, IEEE Press.

Journal Publications

- [5] Muhammad Saad, Zhan Han, Kui Ren, DaeHun Nyang, and David Mohaisen: “e-PoS: Making Proof-of-Stake Decentralized and Fair”. IEEE Transactions on Parallel and Distributed Systems (TPDS), 2021.
- [6] Rhongho Jang*, Changhun Chang, David Mohaisen, KyungHee Lee, and DaeHun Nyang: “A One-Page Text Entry Method Optimized for Rectangle Smartwatches”. IEEE Transactions on Mobile Computing (IEEE TMC), 2020.

- [7] Rhongho Jang*, Youngtae Noh, David Mohaisen, and DaeHun Nyang: “Sketch-based Flow Monitoring and Management for SDN-based WLAN”. *IEEE Transactions on Mobile Computing (IEEE TMC)*, 2020.
- [8] Sungha Baek*, Youngdon Jung*, David Mohaisen, Sungjin Lee and DaeHun Nyang: “SSD-assisted Ransomware Detection and Data Recovery Techniques”. *IEEE Transactions on Computers (IEEE TC)*, 2020.
- [9] Minxin Du, Shuangke Wu, Qian Wang, Dian Chen, Peipei Jiang, David Mohaisen: “GraphShield: Dynamic Large Graphs for Secure Queries with Forward Privacy”. *IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE)*, 2020.
- [10] Mo Abuhamad*, Ahmed Abusnaina*, DaeHun Nyang, David Mohaisen: Sensor-based Continuous Authentication of Smartphones’ Users Using Behavioral Biometrics: A Contemporary Survey. *IEEE Internet of Things Journal (IEEE IoTJ)*, 2020.
- [11] Mazen Alwadi*, Kazi Abu Zubair*, David Mohaisen, Amro Awad. “Phoenix: Towards Ultra-Low Overhead, Recoverable, and Persistently Secure NVM”. *IEEE Transactions on Dependable and Secure Computing (IEEE TDSC)*, 2020.
- [12] Dohyun Kwon, Joongheon Kim, David Mohaisen, and Wonjun Lee. “Self-Adaptive Power Control with Deep Reinforcement Learning for Millimeter-Wave Internet-of-Vehicles Video Caching”. *Journal of Communications and Networks (JCN)*, 2020.
- [13] Muhammad Saad*, Jinchun Choi*, Joongheon Kim, DaeHun Nyang, David Mohaisen: “Towards Characterizing Blockchain-based Cryptocurrencies for Highly-Accurate Predictions”. *IEEE Systems Journal (ISJ)*, 2020. **Best Paper Award**.
- [14] Muhammad Saad*, Jeffrey Spaulding*, Laurent Njilla, Charles Kamhoua, Sachin Shetty, DaeHun Nyang, David Mohaisen: “Exploring the Attack Surface of Blockchain: A Comprehensive Survey”. *IEEE Communications Surveys & Tutorials (IEEE CST)*, 2020.
- [15] Jeman Park*, Manar Mohaisen, DaeHun Nyang, David Mohaisen: “Assessing the effectiveness of pulsing denial of service attacks under realistic network synchronization assumptions”. *Elsevier Computer Networks (COMNET)*, 2020.
- [16] Mohammed Abuhamad*, Tamer Abuhmed, David Mohaisen, and DaeHun Nyang: “AUToSen: Deep Learning-based Implicit Continuous Authentication Using Smartphone Sensors”. *IEEE Internet of Things Journal (IEEE IoTJ)*, 2020.
- [17] Jinchun Choi, Mohammed Abuhamad, Ahmed Abusnaina, Afsah Anwar, Sultan Alshamrani, Jeman Park, DaeHun Nyang, David Mohaisen: “Understanding the Proxy Ecosystem: A Comparative Analysis of Residential and Open Proxies on the Internet”. *IEEE Access* 8: 111368-111380, 2020.
- [18] Afsah Anwar, Aminollah Khormali, Jinchun Choi, Hisham Alasmay, Saeed Salem, DaeHun Nyang, David Mohaisen: “Measuring the Cost of Software Vulnerabilities”. *EAI Endorsed Transactions on Security and Safety (SESA)* 7(23): e1, 2020.
- [19] Mao Ye*, Kazi Abu Zubair*, David Mohaisen, and Amro Awad: “Towards Low-Cost Mechanisms to Enable Restoration of Encrypted Non-Volatile Memories”. *IEEE Transactions on Dependable and Secure Computing (IEEE TDSC)*, 2019.
- [20] Hisham Alasmay*, Amin Khormali*, Afsah Anwar*, Jeman Park*, Jinchun Choi*, Ahmed Abusnaina*, Amro Awad, DaeHun Nyang, David Mohaisen: “Analyzing and Detecting Emerging Internet of Things Malware: A Graph-based Approach”. *IEEE Internet of Things Journal (IEEE IoTJ)*, 2019.
- [21] Laihyuk Park, Chunghyun Lee, Joongheon Kim, David Mohaisen, and Sungrae Cho: “Two-Stage IoT Device Scheduling with Dynamic Programming for Energy Internet Systems”. *IEEE Internet of Things Journal (IEEE IoTJ)*, 2019.
- [22] Ashar Ahmed*, Muhammad Saad*, David Mohaisen: “Secure and Transparent Audit Logs with Block-Audit”. *Elsevier Journal of Network and Computer Applications (JNCA)*, 2019.
- [23] Kyeongseon Kim, Dohyun Kwon, Joongheon Kim, and David Mohaisen: “Personalized Online Live Video Streaming Using Softmax-Based Multinomial Classification”. *Appl. Sci.* 9(11), 2297, 2019.

- [24] Jeman Park^{*}, DaeHun Nyang, and David Mohaisen: “Transparency in the New gTLD Era: Evaluating the DNS Centralized Zone Data Service”. *IEEE Transactions on Network and Service Management (IEEE TNSM)*, 2019.
- [25] Jeffrey Spaulding^{*}, Jeman Park^{*}, Joongheon Kim, DaeHun Nyang, David Mohaisen: “Thriving on chaos: Proactive detection of command and control domains in internet of things-scale botnets using DRIFT”. *Wiley’s Transactions on Emerging Telecommunications Technologies (ETT)*, 2018(8):1-17, 2018.
- [26] David Mohaisen, Zhongshu Gu, and Kui Ren, Charles Kamhoua, Laurent Njilla, DaeHun Nyang: “Look-Aside at Your Own Risk: Privacy Implications of DNSSEC Look-aside Validation”. *IEEE Transactions on Dependable and Secure Computing (IEEE TDSC)*, 99(9):100–113, 2018.
- [27] An Wang^{*}, Wentao Chang^{*}, Songqing Chen, and David Mohaisen: “A Data-Driven Study of DDoS Attacks and Their Dynamics”. *IEEE Transactions on Dependable and Secure Computing (IEEE TDSC)*, 99(9):100–113, 2018.
- [28] David Mohaisen, Omar Alrawi, Jeman Park^{*}, Joongheon Kim, DaeHun Nyang, and Manar Mohaisen: “Network-based Analysis and Classification of Malware using Behavioral Artifacts Ordering”. *EAI Endorsed Transactions on Security and Safety (SESA)*, 2018.
- [29] Feng Shen^{*}, Justin Del Vecchio^{*}, David Mohaisen, Steven Y. Ko and Lukasz Ziarek: “Android Malware Detection using Multi-Flows and API Patterns”. *IEEE Transactions on Mobile Computing (IEEE TMC)*, 99(9):100–113, 2018.
- [30] Fan Dang^{*}, Pengfei Zhou^{*}, Zhenhua Li, Ennan Zhai, David Mohaisen, Qingfu Wen, and Mo Li: “Large-scale Invisible Attack on AFC Systems with NFC-equipped Smartphones”. *IEEE Transactions on Mobile Computing (IEEE TMC)*, 99(9):100–113, 2018.
- [31] RhongHo Jang^{*}, Jeonil Kang[‡], David Mohaisen, and DaeHun Nyang: Catch Me If You Can: Rogue Access Point Detection Using Intentional Channel Interference. *IEEE Transactions on Mobile Computing (IEEE TMC)*, 99(9):100–113, 2018.
- [32] An Wang^{*}, Wentao Chang^{*}, Songqing Chen, and David Mohaisen. “Delving into Internet DDoS Attacks by Botnets: Characterization and Analysis”. *ACM/IEEE Transactions on Networking (IEEE ToN)*, 99(9):100–113, 2018.
- [33] David Mohaisen, and Kui Ren: “Leakage of .onion at the DNS Root: Measurements, Causes, and Countermeasures”. *ACM/IEEE Transactions on Networking (IEEE ToN)*, 25(5): 3059-3072, 2018.
- [34] DaeHun Nyang, Hyounghick Kim, Woojoo Lee, Sung-bae Kang, Geumhwan Cho, Mun-Kyu Lee, David Mohaisen: “Two-Thumbs-Up: Physical Protection for PIN Entry Secure against Recording Attacks”. *Elsevier Computers and Security (COSE)*, 68(6): 1-15, 2018.
- [35] Hyukmin Kwon^{*}, Jiyong Woo[‡], David Mohaisen, Yongdae Kim, and Huy Kang Kim: “Crime Scene Reconstruction: Online Gold Farming Network Analysis”. *IEEE Transactions on Information Forensics and Security (IEEE TIFS)*, 12(3): 544-556, 2017.
- [36] Joongheon Kim and David Mohaisen: “Distributed and Reliable Decision-Making for Cloud-Enabled Mobile Service Platforms”. *International Journal of Distributed Sensor Networks (IJDSN)*, 2017.
- [37] Myungsun Kim, David Mohaisen, Jung Hee Cheon, Yongdae Kim: “Private Over-Threshold Aggregation Protocols over Distributed Datasets”. *IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE)*, vol. 28, No. 9, pp. 2467-2479, 2016.
- [38] Jae-wook Chang^{*}, Hyunjae Kang^{*}, Jiyoung Woo[‡], David Mohaisen, Huy Kang Kim: “Andro-Dumpsys: Anti-Malware System Based on the Similarity of Malware Creator and Malware Centric Information”. *Elsevier Computers and Security (COSE)*, 58(3): 125-138, 2016.
- [39] Ah Reum Kang[‡], Seong Hoon Jeong^{*}, David Mohaisen, and Huy Kang Kim: “Multimodal game bot detection using user behavioral characteristics”. *SpringerPlus*, 5(1): 1-19, 2016.
- [40] Jae-wook Jang^{*}, Jaesung Yun^{*}, David Mohaisen, Jiyoung Woo[‡], and Huy Kang Kim: “Detecting and Classifying Method based on Similarity Matching of Android Malware Behavior with Profile”. *SpringerPlus*, 5(1): 1-23, 2016.

- [41] David Mohaisen, Hesham Mekky*, Haiyong Xie, Xinwen Zhang, and Yongdae Kim: “Timing Attacks on Access Privacy in Information Centric Networks and Countermeasures”. *IEEE Transactions on Dependable and Secure Computing (IEEE TDSC)*, 12(6): 675-687, 2015.
- [42] David Mohaisen and Omar Alrawi*. “AMAL: High-Fidelity, Behavior-based Automated Malware Analysis and Classification”. *Elsevier Computers and Security (COSE)*, 52(4): 251-266, 2015.
- [43] Jae-wook Jang*, Hyunjae Kang*, Huy Kang Kim, Jiyoung Woo[‡], David Mohaisen: “Andro-AutoPsy: Anti-malware system based on similarity matching of malware and malware creator-centric information”. *Elsevier Digital Investigation Journal (DIJ)*, 14(5): 17-35, 2015.
- [44] Youngjae Maeng*, David Mohaisen, Munkyu Lee, and DaeHun Nyang: “Transaction Authentication Using Complementary Colors”. *Elsevier Computers and Security (COSE)*, 48(2): 167-181, 2015.
- [45] Hyunjae Kang*, Jae-wook Jang*, David Mohaisen and Huy Kang Kim: “Detecting and Classifying Android Malware using Static Analysis and Creator Information”. *International Journal of Distributed Sensor Networks (IJDSN)*, 2015(7): 1-9, 2015.
- [46] DaeHun Nyang, David Mohaisen, and Jeonil Kang[‡]. “Keylogging-resistant Visual Authentication Protocols”. *IEEE Transactions on Mobile Computing (IEEE TMC)*, 13(11): 2566-2579, 2014.
- [47] Joongheon Kim, David Mohaisen, Jong-Kook Kim: “Fast and Low-Power Link Setup for IEEE 802.15.3c Multi-Gigabit/s Sensor Networks”. *IEEE Communication Letters (IEEE CL)*, 18(3): 455-458, 2014.
- [48] David Mohaisen, Huy Tran*, Abhishek Chandra, and Yongdae Kim: “Trustworthy Distributed Computing on Social Networks”. *IEEE Transactions on Services Computing (TSC)*, 7(3): 333-345, 2014.
- [49] Joongheon Kim, David Mohaisen, Song-Nam Hong: “Interference Impacts on 60 GHz Real-Time Video Streaming in Wireless Smart TV Platforms”. *Springer Multimedia Tools and Applications*, 74(19): 8613-8629, 2014.
- [50] David Mohaisen, Denis Foo Kune, Eugene Vasserman, and Yongdae Kim: “Secure encounter-based social networks: Requirements, challenges, and designs”. *IEEE Transactions on Dependable and Secure Computing (IEEE TDSC)*, 7(6): 333-345, 2013.
- [51] Yanhua Li*, David Mohaisen, Zhi-Li Zhang: “Trading Optimality for Scalability in large-scale Wireless Networks Opportunistic Routing”. *IEEE Transactions on Vehicular Technology (IEEE TVT)*, 65(5): 2253-2263, 2013.
- [52] Manar Mohaisen, David Mohaisen, Merouane Debbah: “Parallel QRD-M encoder for multi-user MIMO systems”. *Telecommunication Systems Journal*, 57(3): 261-270, 2013.
- [53] David Mohaisen and DaeHun Nyang: “On the inefficiency of resources optimal key pre-distribution scheme for sensor network”. *Journal of Communications*, 5(2): 164-168, 2010.
- [54] Dowon Hong and David Mohaisen. “Augmented rotation-based transformation for privacy-preserving data clustering”. *ETRI Journal*, 31(3): 351-361, 2010.
- [55] David Mohaisen and Dowon Hong: “Mitigating the ICA attack on rotation transformation for privacy preserving clustering”. *ETRI Journal*, 30 (6): 868-870, 2008.
- [56] Tamer Abuhmed, David Mohaisen, DaeHun Nyang: “A survey on deep packet inspection for intrusion detection systems”. *Korean Telecommunication Magazine*, 2008. **Cited more than 90 times**

Conference Publications

- [57] Ahmed Abusnaina*, Rhongho Jang*, Aminollah Khormali*, DaeHun Nyang, and David Mohaisen: “Deep Fingerprinting Defender: Adversarial Learning-based Approach to Defend Against Website Fingerprinting”. *The 39th IEEE International Conference on Computer Communications, IEEE INFOCOM*, virtual, June 2020.
- [58] Rhongho Jang*, Daehong Min, Seongkwang Moon, David Mohaisen, and DaeHun Nyang: “Sketch-Flow: Per-Flow Systematic Sampling Using Sketch Saturation Event”. *The 39th IEEE International Conference on Computer Communications, IEEE INFOCOM*, virtual, June 2020.
- [59] Hisham Alasmay*, Ahmed Abusnaina*, Rhongho Jang*, Mohammed Abuhamad*, Afsah Anwar*, DaeHun Nyang, and David Mohaisen: “Soteria: Detecting Adversarial Examples in Control Flow Graph-based Malware Classifiers”. *Proceedings of 40th IEEE International Conference on Distributed Computing Systems, IEEE ICDCS*, virtual, December 2020..

- [60] Ulku Meteriz*, Necip Fazil Yaldiran*, Joongheon Kim, and David Mohaisen: "Understanding the Potential Risks of Sharing Elevation Information on Fitness Applications". *Proceedings of 40th IEEE International Conference on Distributed Computing Systems*, **IEEE ICDCS**, virtual, December 2020..
- [61] Mohammed Abuhamad*, Tamer Abuhmed, DaeHun Nyang, and David Mohaisen: "Multi-X: Identifying Multiple Authors from Source Code Files". In *Proceedings of the Privacy Enhancing Technologies Symposium (PoPETS 2020)*, virtual.
- [62] Afsah Anwar*, Hisham Alasmay*, Jeman Park*, An Wang, Songqing Chen and David Mohaisen. "Statically Dissecting Internet of Things Malware: Analysis, Characterization, and Detection". *The 22nd International Conference on Information and Communications Security*, **ICICS 2020**, virtual.
- [63] Ahmed Abusnaina*, Mohammed Abuhamad*, Daehun Nyang, Songqing Chen, An Wang and David Mohaisen. "Insights into Attacks' Progression: Prediction of Spatio-Temporal Behavior of DDoS Attacks". In *Proceedings of the 21st International Conference on Information Security Applications*, **WISA 2020**, Jeju, Korea, August 22-25, 2020.
- [64] Ahmed Abusnaina*, Hisham Alasmay*, Mohammed Abuhamad*, Saeed Salem, DaeHun Nyang, and David Mohaisen, "Subgraph-based Adversarial Examples Against Graph-based IoT Malware Detection Systems". *International Conference on Computational Data and Social Networks*, **CSoNet**, 2019.
- [65] David Mohaisen, Songqing Chen: "Computer Systems Have 99 Problems, Let's Not Make Machine Learning Another One". *IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications (IEEE TPS)*, Los Angeles, CA, USA, Dec 12-14, 2019.
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- [108] Galileo Namata, Andrew G. West, and David Mohaisen. “Web of Redirection: Measuring Domain Forwarding and Applications at Internet-scale” In *Proceedings of the 2014 Internet Measurement Conference*, **ACM IMC**, Vancouver, BC, Canada, November 5-7, 2014. (AR: **22%**) (withdrawn by verisign).
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- [112] Hyun Jae Kang*, Jae-wook Jang*, David Mohaisen and Huy Kang Kim: “AndroTracker: Creator Information based Android Malware Classification System”. In *Proceedings of the 15th International Conference on Information Security Applications*, **WISA**, Jeju, Korea, Aug 25-27, 2014. (AR: **33%**)
- [113] David Mohaisen, Mansurul Bhuiyan*, and Yannis Labrou: “Name Server Switching: Anomaly Signatures, Usage, Clustering, and Prediction”. In *Proceedings of the 15th International Conference on Information Security Applications*, **WISA**, Jeju, Korea, Aug 25-27, 2014. (AR: **33%**)
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- [124] David Mohaisen, Tamer AbuHmed, Ting Zhu, and Manar Mohaisen: “Collaboration in social network-based information dissemination”. In *IEEE International Conference on Communications*, **IEEE ICC**, Ottawa, ON, Canada, June 10-15, 2012. (AR: **36%**)
- [125] David Mohaisen, Nicholas Hopper, and Yongdae Kim: “Keep your friends close: Incorporating trust into social network-based sybil defenses”. In *The 30th IEEE International Conference on Computer Communications*, **IEEE INFOCOM**, Shanghai, China, April 10-15, 2011. (AR: **16%**).
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- [128] Manar Mohaisen, David Mohaisen, Yanhua Li, and Pengkui Luo: “Parallel QRD-M encoder for decentralized multi-user MIMO systems”. In *IEEE International Conference on Communications*, **IEEE ICC**, Kyoto, Japan, 5-9 June, 2011. (AR: **38%**)
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- [135] YoungJae Maeng, David Mohaisen, and DaeHun Nyang: “Secret key revocation in sensor networks”. In *Proceedings of the 4th International Conference on Ubiquitous Intelligence and Computing*, **IEEE UIC**, Hong Kong, China, July 11-13, 2007. (AR: **25.7%**)
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- [138] DaeHun Nyang and David Mohaisen: “Cooperative public key authentication protocol in wireless sensor network”. In *Proceedings of the 3rd International Conference on Ubiquitous Intelligence and Computing*, **IEEE UIC**, Wuhan, China, September 3-6, 2006. (AR: **30%**)

Workshop Publications

- [139] Soohyun Park, Jeman Park, David Mohaisen, Joongheon Kim. “Reinforced Edge Selection using Deep Learning for Robust Surveillance in Unmanned Aerial Vehicles”. *The 11th IEEE Conference on IT Convergence*, **IEEE ICTC**. Jeju, Republic of Korea, Oct 21, 2020 (virtual).
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- [141] Sultan Alshamrani, Ahmed Abusnaina, DaeHun Nyang, David Mohaisen. “Investigating Online Toxicity in Users Interactions with the Mainstream Media Channels on YouTube”. *The 5th International Workshop on Mining Actionable Insights from Social Networks*, **MAISoN**, August 2020 (virtual).
- [142] Sultan Alshamrani, Ahmed Abusnaina, David Mohaisen. “Hiding in Plain Sight: A Measurement and Analysis of Kids’ Exposure to Malicious URLs on YouTube”, *Third ACM/IEEE Workshop on Hot Topics on Web of Things*, **HotWoT**. Washington DC., Nov 15, 2020 (virtual).
- [143] Muhammad Saad, Ashar Ahmad, David Mohaisen: “Fighting Fake News Propagation with Blockchains (short paper)”. In *The 2nd International Workshop on Distributed Ledger of Things*, **IEEE DLoT**, in conjunction with **IEEE CNS**, Washington, D.C., June 13, 2019.
- [144] Muhammad Saad, Laurent Njilla, Charles Kamhoua, and David Mohaisen: “Countering Selfish Mining in Blockchains”. In *the IEEE Workshop on Computing, Nets and Communications*, **IEEE CNC**, 2019.
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- [148] David Mohaisen, Omar Al-Ibrahim[‡], Charles Kamhoua Kevin Kwiat, Laurent Njilla: “Rethinking Information Sharing for Actionable Threat Intelligence”. In *5th IEEE Workshop on Hot Topics in Web Systems and Technologies*, **IEEE HotWeb**, San Jose, CA, USA, October 14, 2017. (AR: **38%**)
- [149] Jeffrey Spaulding*, DaeHun Nyang and David Mohaisen: “Understanding the Effectiveness of Typosquatting Techniques”. In *5th IEEE Workshop on Hot Topics in Web Systems and Technologies*, **IEEE HotWeb**, San Jose, CA, USA, October 14, 2017. (AR: **38%**)
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- [151] Ah Reum Kang[‡], Seong Hoon Jeong*, Steve Ko, Kui Ren, and David Mohaisen: “Transparency in the New gTLD Era: Evaluating the DNS Centralized Zone Data Service”. In *4th IEEE Workshop on Hot Topics in Web Systems and Technologies*, **IEEE HotWeb**, Washington, D.C., USA, Oct 24-25, 2016.
- [152] Omar Alrawi* and David Mohaisen: “Chains of Distrust: Towards Understanding Certificates Used for Signing Malicious Applications”. In *Proceedings of the 25th Int’l Conference on World Wide Web (companion volume)*, **WWW**, Montreal, Canada, April 11-15, 2016. *Workshop Paper* (AR: **42%**)
- [153] David Mohaisen: “Towards Automatic and Lightweight Detection and Classification of Malicious Web Contents”. In *Proceeding of the Third IEEE Workshop on Hot Topics in Web Systems and Technologies*, **IEEE HotWeb**, Washington, D.C., USA, November 11-13, 2015. (AR: **50%**)
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- [155] David Mohaisen and Omar Alrawi*. “Unveiling Zeus: Automated Classification of Malware Samples”. In *Proceedings of the 22nd International Conference on World Wide Web (companion volume)*, **WWW**, Rio de Janeiro, Brazil, May 13-17, 2013 *Workshop paper* (AR: **40%**).

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Poster Abstracts, Demos, and Tutorials

- [159] Rhongho Jang, Seongkwang Moon, Youngtae Noh, David Mohaisen, DaeHun Nyang: “A cost-effective anomaly detection system using in-DRAM working set of active flows table: poster”. *The 12th ACM Conference on Security and Privacy in Wireless and Mobile Networks, ACM WiSec*, 2019.
- [160] Jinchun Choi, Afsah Anwar, Hisham Alasmay, Jeffrey Spaulding, DaeHun Nyang, David Mohaisen: “Analyzing endpoints in the internet of things malware: poster”. *The 12th ACM Conference on Security and Privacy in Wireless and Mobile Networks, ACM WiSec*, 2019.
- [161] Ahmed Abusnaina, Hisham Alasmay, Jeman Park, Afsah Anwar, Ulku Meteriz, David Mohaisen: “Breaking graph-based IoT malware detection systems using adversarial examples: poster”. *The 12th ACM Conference on Security and Privacy in Wireless and Mobile Networks, ACM WiSec*, 2019.
- [162] Ahmed Abusnaina, D. Nyang, M. Yuksel, David Mohaisen: “Examining the Security of DDoS Detection Systems in Software Defined Networks”. *Proceedings of the 15th International Conference on emerging Networking EXperiments and Technologies, ACM CoNEXT*, Orlando, FL, Dec 9-12, 2019.
- [163] Jeman Park, Manar Mohaisen, David Mohaisen: “Investigating DNS Manipulation by Open DNS Resolvers”. *Proceedings of the 15th International Conference on emerging Networking EXperiments and Technologies, ACM CoNEXT*, Orlando, FL, Dec 9-12, 2019.
- [164] Ahmed Abusnaina, Aminollah Khormali, Hisham Alasmay, Jeman Park, Afsah Anwar, Ulku Meteriz and David Mohaisen: “Poster: Examining Adversarial Learning against Graph-based IoT Malware Detection Systems”, *Proceeding of the Network and Distributed System Security Symposium, ISOC NDSS*, San Diego, CA, USA, Feb 24-27, 2019.
- [165] Rhongho Jang, S. Moon, Y. Noh, David Mohaisen, and D. Nyang: “Poster: Scaling Up Anomaly Detection Using In-DRAM Working Set of Active Flows Table”. *Proceeding of the Network and Distributed System Security Symposium, ISOC NDSS*, San Diego, CA, USA, Feb 24-27, 2019.
- [166] Jinchun Choi, Afsah Anwar, Hisham Alasmay, Jeffrey Spaulding, Daehun Nyang and David Mohaisen: “Poster: Analyzing Endpoints in the Internet of Things Malware”. *Proceeding of the Network and Distributed System Security Symposium, ISOC NDSS*, San Diego, CA, USA, Feb 24-27, 2019.
- [167] Muhammad Saad, Victor Cook, Lan Nguyen, My T. Thai and David Mohaisen: “Poster: Exploring Spatial, Temporal, and Logical Attacks on the Bitcoin Network”. *Proceeding of the Network and Distributed System Security Symposium, ISOC NDSS*, San Diego, CA, USA, Feb 24-27, 2019.
- [168] Hisham Alasmay, Aminollah Khormali, Afsah Anwar, Jeman Park, Jinchun Choi, Daehun Nyang and David Mohaisen: “Poster: Analyzing, Comparing, and Detecting Emerging Malware: A Graph-based Approach”, *Proceeding of the Network and Distributed System Security Symposium, ISOC NDSS*, San Diego, CA, USA, Feb 24-27, 2019.
- [169] Mohammed Abuhamad, Tamer Abuhmed, David Mohaisen, and Daehun Nyang: “DL-CAIS: Deep Learning-based Code Authorship Identification System”. *Proceeding of the Network and Distributed System Security Symposium, ISOC NDSS*, San Diego, CA, USA, Feb 24-27, 2019.
- [170] David Mohaisen and Joongheon Kim. “Tutorial: Securing the Internet of Things: Machine Learning Approach”. *IEEE International Conference on Communications, IEEE ICC*, Kansas City, MO, USA, May 20-24, 2018.
- [171] Afsah Anwar, Amin Khormali, and David Mohaisen: “POSTER: Understanding the Hidden Cost of Software Vulnerabilities: Measurements and Predictions”. *The 13th ACM Symposium on Information, Computer and Communications Security, ACM ASIACCS*, Songdo, Incheon, Korea, June 4-8, 2018.

- [172] Muhammad Saad, My T. Thai, and David Mohaisen: ““POSTER: Deterring DDoS Attacks on Blockchain-based Cryptocurrencies through Mempool Optimization”. *The 13th ACM Symposium on Information, Computer and Communications Security, ACM ASIACCS*, Songdo, Incheon, Korea, June 4-8, 2018.
- [173] Rhongho Jang^{*}, Jeonil Kang[‡], David Mohaisen and Daehun Nyang. “Rogue Access Point Detector Using Characteristics of Channel Overlapping in 802.11n”. *The 37th IEEE Int’l Conf on Distributed Computing Systems, IEEE ICDCS*, Atlanta, GA, USA, Jun 5-7, 2017. (demo; 6 pages).
- [174] Feng Shen^{*}, Justin Del Vecchio^{*}, David Mohaisen, Steven Y. Ko and Lukasz Ziarek. “Android Malware Detection using Multi-Flows and API Patterns”. *Proceeding of The 15th ACM International Conference on Mobile Systems, Applications, and Services, ACM MobiSys 2017*, Niagara Falls, NY, USA, June 19th - 23rd, 2017.
- [175] Rhongho Jang^{*}, Jeonil Kang[‡], David Mohaisen and Daehun Nyang. “Highly-Accurate Rogue Access Point Detection using Intentional Channel Interference”. *Proceedings of the 10th ACM Conference on Security and Privacy in Wireless and Mobile Networks, ACM WiSec*, 2017.
- [176] Rhongho Jang^{*}, Donggyu Cho^{*}, David Mohaisen, Youngtae Noh, Daehun Nyang. “Two-level Network Monitoring and Management in WLAN using Software-Defined Networking”. *Proceedings of the 10th ACM Conference on Security and Privacy in Wireless and Mobile Networks, ACM WiSec*, 2017.
- [177] Jeffrey Spaulding^{*}, Shambhu Upadhyaya and David Mohaisen. “You’ve Been Tricked! A User Study of the Effectiveness of Typosquatting Techniques”. *The 37th IEEE Int’l Conf on Distributed Computing Systems, IEEE ICDCS*, Atlanta, GA, USA, Jun 5-7, 2017. (abstract; 4 pages), 2017.
- [178] Seong Hoon Jeong^{*}, Ah Reum Kang[‡], Joongheon Kim, Huy Kang Kim, and David Mohaisen. “A Longitudinal Analysis of .i2p Leakage in the Public DNS Infrastructure” *Proceedings of the 2016 ACM Conference on Special Interest Group on Data Communication, ACM SIGCOMM*, Brazil, August 22-26, 2016. (AR: **38%**)
- [179] Mee Lan Han^{*}, H.-C. Han^{*}, Ah Reum Kang[‡], Byung Il Kwak^{*}, David Mohaisen, Huy Kang Kim. “WHAP: Web-Hacking Profiling Using Case-Based Reasoning”. *Proceedings of IEEE Conference on Communications and Network Security, IEEE CNS*, Philadelphia, PA, USA, Oct. 17-19, 2016
- [180] Ah Reum Kang[‡] and David Mohaisen. “Automatic Alerts Annotation for Improving DDoS Mitigation Systems” *Proceedings of IEEE Conference on Communications and Network Security, IEEE CNS*, Philadelphia, PA, USA, Oct. 17-19, 2016
- [181] An Wang^{*}, Wentao Chang^{*}, David Mohaisen, and Songqing Chen. “How Distributed Are Today’s DDoS Attacks”. *Proceedings of the 2014 ACM SIGSAC Conference on Computer and Communications Security, ACM CCS*, Scottsdale, AZ, USA, November 3-7, 2014.
- [182] Hesham Z. Mekky^{*}, David Mohaisen, and Zhi-Li Zhang. “Separating Benign and Malware Events for Accurate Malware Classification”. *Proceedings of the 2014 ACM SIGSAC Conference on Computer and Communications Security, ACM CCS*, Scottsdale, AZ, USA, November 3-7, 2014.
- [183] Wentao Chang^{*}, An Wang^{*}, David Mohaisen, and Songqing Chen. “Characterizing Botnets-as-a-Service”. *Proceedings of the 2014 ACM Conference on Special Interest Group on Data Communication, ACM SIGCOMM*, Chicago, Illinois, USA, August 22, 2014. (AR: **38%**)
- [184] David Mohaisen, Omar Alrawi^{*}, Andrew West, Allison Mankin. “Babble: Identifying Malware by Its Dialects”. *Proceeding of the IEEE Conference on Communications and Network Security, IEEE CNS*, National Harbor, MD, USA, October 14-16, 2013
- [185] Ahmed E. Kosba^{*}, David Mohaisen, Andrew West, Trevor Tonn. “ADAM: Automated Detection and Attribution of Malicious Webpages”. *Proceeding of the IEEE Conference on Communications and Network Security, IEEE CNS*, National Harbor, MD, USA, October 14-16, 2013. **Best Poster Award**
- [186] David Mohaisen, Xinwen Zhang, Max Schuchard, Haeyong Xie, Yongdae Kim. “Protecting Access Privacy of Cached Contents in Information Centric Networks”. *Proceedings of ACM Conference on Computer and Communications Security, ACM CCS*, Raleigh, NC, USA, October 16-18, 2012.

Panels

- [187] David Mohaisen (with Moti Yung (Google/Columbia), Xinxin Fan (IoTeX), Ning Zhang (WUSTL), Hong-Sheng Zhou (VCU)), “Blockchain Meets Internet of Things: Opportunities and Challenges”, *The 1st Workshop on Distributed Ledger of Things, DLoT*, New York City, NY, USA, Nov 1, 2018.

- [188] David Mohaisen (with Wenjing Lou; Virginia Tech, Prateek Saxena; National University of Singapore, and Stanley Yong; IBM). “Blockchain and its Emerging Applications”. *International Conference on Security and Privacy in Communication Networks, SecureComm 2018*, Singapore, August 8-10, 2018
- [189] David Mohaisen (with Andreas Hulsing, Burt Kaliski, David McGrew, Russ Housley). “Shoring up the Infrastructure: A strategy for Standardizing Hash Signatures”. *Workshop on Cybersecurity in a Post-Quantum World*, Gaithersburg, MD, USA, April 2, 2015.
- [190] David Mohaisen (with Wenjing Lou, Sushil Jajodia, Neeraj Suri, and Mukesh Singhal). “Networks Security: The Triumph and Tribulation”. *Proceeding of the IEEE Conference on Communications and Network Security, IEEE CNS*, San Francisco, CA, USA, October 29-31, 2014

Patents

- [191] 10,171,415: Characterization of domain names based on changes (w/ Bhuiyan and Labrou).
- [192] 10,038,706: Systems, devices, and methods for separating malware.. events (w/ Mekky)
- [193] 9,769,189: Systems and methods for behavior-based malware.. classification (w/ Alrawi)
- [194] 9,578,125: Systems, devices, and methods for.. privacy of cached content (sole)
- [195] 9,489,514: Classifying malware by order of network behavior artifacts (w/ Mankin and Tonn)
- [196] 8,745,696: Apparatus and method for privacy protection in.. rule mining (w/ Jho and Hong)
- [197] 8,112,386: Rotation based transformation method and for.. data privacy (w/ Hong)
- [198] US15/147,387: (pending) Methods and systems for DNDN (w/ Osterweil, Murray, and Mcpherson)
- [199] 14/868,594: (pending) Access control for named domain networking (w/ Shirvanian and Murray)

Selected Invited Talks

Malware Analysis and Classification with Machine Learning

University of Massachusetts Dartmouth (virtual), November 2020

Summer School of System Security at Zhejiang University (virtual), August 2020

Understanding the Dynamics and Interdependencies in IoT Botnets

IEEE Conference on Dependable and Secure Computing, November 2019

Examining the Robustness of Learning-Based DDoS Detection in SDNs

IEEE Conference on Dependable and Secure Computing, November 2019

Privacy-Preserving Deep Learning for Medical Big-Data Platforms

IEEE International Conference on Dependable Systems and Networks, June 2019

Defending Against DDoS Attacks in PoW-based Blockchain Systems

IEEE International Conference on Blockchain and Cryptocurrency, May 2019

Towards Blockchain-based Secure and Efficient BGP Routing

IEEE International Conference on Blockchain and Cryptocurrency, May 2019

Graph-based Comparison of IoT and Android Malware

International Conference on Computational Data and Social Networks, Dec. 2018

Large-Scale and Language-Oblivious Code Authorship Identification

George Mason University, November 2019

Embry-Riddle Aeronautical University, February 2019

Zhejiang University, December 2018

ACM CCS 2018, October 2018

Understanding blockchain systems via attack surface analysis

IEEE LightChain 2019 (keynote), June 2019

ETRI, Republic of Korea, August 2019

AFRL, Rome, NY, June 2019

Securing the Internet of Things: A Machine Learning Approach

Inha University, June 2018

IEEE ICC 2018 (tutorial), May 2018

Assessing the Attack Surface of Blockchain

Army/CERDEC symposium on blockchain, MD, November 2017

NATO Innovation Hub/Old Dominion, VA, October 2017

Air Force Research Laboratory, Rome, NY, June 2017

Defeating Automated Internet-scale Threats

University of Central Florida, Feb 2017

A data-driven approach to DDoS defenses

Korea University, Seoul, Korea, August 2016

Inha University, Incheon, Korea, August 2016

Chung Ang University, Seoul, Korea, August 2016

SungKyunKwan University, Suwon, Korea, August 2016

Soongsil University, Seoul, Korea, August 2016

ETRI, Daejeon, Korea, August 2016

Air Force Research Lab, Rome, NY, August 2016

Introduction to Malware Analysis

Information Assurance and Management (UB), August 2016

Measurement of Leakage of .Onion at the Root

University of California, Irvine, October 2014

ICANN 51, Los Angeles, CA, October 2014

Dissecting bad codes with AMAL, Chatter, and AVMeter

University at Buffalo, May 2015

Princeton University, April 2014

Virginia Tech, April 2014

George Mason University, October 2013

Korea Advanced Institute of Science and Technology, August 2013

Korea University, August 2013

Inha University, August 2013

Towards Trustworthy Computing on Social Networks

Verisign Labs, April 2012

Korea University, April 2012

Inha University, April 2012

ETRI, April 2012

Princeton University, January 2012

Teaching and Evaluation

I developed and offered eight courses (three at Buffalo) on systems security, applied cryptography, and natural language processing. My ratings have been between 4 and 4.5 out of 5, well above the CS/CECS averages.

CAP 6133: Advanced Topics in Computer Security and Computer Forensic

Fall 2017: 12 students (**4.6/5**), Fall 2016: 24 students (**4.6/5**), Fall 2015: 10 students (**5.0/5**)

CAP 5150: Foundations of Computer Security and Privacy

Spring 2020: 17 students (**4.0/5**), Spring 2016: 27 students (**4.0/5**)

CAP 6640: Computer Understanding of Natural Language

Spring 2020: 48 students (**4.2/5**), Spring 2019: 51 students (**4.0/5**)

CIS 4615: Secure Software Development and Assurance

Fall 2018: 23 students (**4.5/5**), Fall 2017: 22 students (**3.7/5**)

CIS 4361: Secure Operating Systems and Administration

Spring 2019: 59 students (**4.5/5**)

CNT 7919: Doctoral Research

Summer, Fall, and Spring (2017-2020). No students evaluation.

CNT 7980: Doctoral Dissertation

Summer, Fall, and Spring (2017-2020). No students evaluation.

CSE 410: Introduction to Computer Security (at SUNY Buffalo)

Fall 2016: 79 students (3.7/5)

University Service

University of Central Florida, Orlando, FL, USA

Chair, Promotion of Instructors/Lecturers, College of Engineering (elected), 2020

Lead, Graduate Admission Committee (Security Area), Computer Science, 2019

Member, Promotion and Tenure Committee, Computer Science, 2019
Member, Cyber Security and Privacy FCI Faculty Search Committee, 2019
Member, Computer Science Faculty Search Committee, 2019
Chair, Promotion of Instructors/Lecturers, College of Engineering (elected), 2019
Member, Faculty Senate (elected), 2018–2020
Member, College of Graduate Studies' Graduate Policy Committee, 2018–2020
Member, Cyber Security and Privacy FCI Lead Search Committee, 2017
Lead/Coordinator, INHA -UCF dual degree doctoral program, 2017–2020

University at Buffalo, SUNY, Buffalo, NY

Member, Colloquium Committee, 2015–2017
Member, Graduate Studies Committee, 2015–2017
Member, Graduate Admission Committee, 2015–2017

Membership in Organizing Committees

Vice Chair: Technical Committee on the Internet, IEEE Computer Society, 2020–

General co-chair: ACM CoNEXT 2019

TPC co-chair: EAI SECURECOMM 2019. IEEE ICPADS 2019 (security track). IEEE ICC 2019 (security track). IEEE ICASSP 2018 (security track). IEEE MASS 2018 (security track). ACM AsiaCCS-SCC 2018. IEEE HotPOST 2017. IEEE TRUSTCOM 2016 (privacy track). IEEE SIMPLEX 2016–2013

Posters co-chair: IEEE ICDCS 2021. ACM WiSec 2019. IEEE PAC 2017

Publicity co-chair: IEEE CNS 2020. ACM ASIACCS 2018. IEEE PAC 2017

Workshops co-chair: ACM/IEEE SEC 2019. IEEE DSC 2019. SECURECOMM (2018, 2017)

PC Meeting Organizer: IEEE INFOCOM 2020

Treasurer: ACM MobiSys 2017

Tutorial chair: ACM/IEEE SEC 2020

Travel co-chair: IEEE CNS 2016

Travel committee member: ISOC NDSS 2018

Session Chair: WISA 2019. ACM/IEEE SEC 2018 (workshops). SECURECOMM 2018. CSoNET 2018. NDSS 2018. ICDCS 2017. INFOCOM 2017. WISA (2019, 2016, 2013). IEEE CNS (2016, 2014). HotWeb (2015, 2017) ASIACCS (2013, 2018). ICISC 2012. STC 2012.

Journal Editorial Board

co-Editor-in-Chief, EAI Transactions on Security and Safety (2019–)

Associate Editor, IEEE Transactions on Parallel and Distributed Systems (2020–)

Associate Editor, Elsevier Computer Networks (2019–)

Associate Editor, IEEE Transactions on Mobile Computing (2018–)

Area Editor, ETRI Journal (2017–)

Area Editor, KSII Transactions on Internet and Information Systems (2015–2016)

Program Committee Member

AAAI 2021. PETS (2021–2019). IEEE ICDCS (2021–2017, 2014). IEEE INFOCOM (2021–2017). IEEE CIC 2020. IEEE CNS (2019–2016, 2014). ACM ASIACCS (2018, 2016–2014). ACM WiSec 2020. SECURECOMM (2020–2016). AAAI ICWSM (2018, 2016, 2014). IEEE CLOUD (2019, 2018). ISOC NDSS (2018). IEEE ICCCN (2017, 2016). IEEE GLOBECOMM (2019–2016, 2014). IEEE MILCOM (2018–2014). IFIP DBSEC (2017, 2016). IEEE ICC (2020–2015). DIMVA (2015, 2014). WWW (2015, 2014). ACM SCC (2015–2013). ISOC SENT (2015–2014). HOTPOST (2015–2012). ICISC (2015–2012). IFIP Networking 2013. ACM STC 2012.

Journals Reviewer

ACM Computing Surveys (2015), ACM Transactions on Information and System Security (2019–2013), ACM/IEEE Transactions on Networking (2018–2013), ETRI Journal (2017–2012, 2009–2007), IEEE Communication Letters (2015–2012, 2010, 2009), IEEE Transactions on Cloud Computing (2019, 2015), IEEE Transactions on Dependable and Secure Computing (2019–2012), IEEE Transactions on Mobile Computing (2019–2015), IEEE Transactions on Services Computing (2017, 2016), IEEE Transactions on Big Data (2019–2016), IEEE Transactions on Knowledge and Data Engineering (2016–2014), IEEE Transactions on Internet of Things (2019–2017), IEEE Internet Computing (2019), IET Information Security (2017), Journal

of Communications and Networks (2015–2013), Proceedings of IEEE (2019), Elsevier Journal of Network and Computer Applications (2019, 2020), Security and Communication Networks (2013), Springer Cluster Computing (2017), Springer Computational Social Networks (2015, 2014), Springer International Journal of Information Security (2017, 2015, 2013), Springer Journal of Supercomputing (2015), KSII Transactions on Internet and Information Systems (2015–2011)

Funding Proposals Reviewer

US National Science Foundation (2020–2016); programs: CPS, CSR, NeTS, SaTC, CAREER.
European Research Council (ERC; 2018)
US Department of Homeland Security (2019, 2018, 2016)
US Army Research Office (2017)
US–Israel Binational Science Foundation (BSF; subreviewer, 2013, 2012)
National Science Centre (Narodowe Centrum Nauki of Poland (NCN; 2018)

Media Coverage

01/17/2020, FoxNews, Demands for Apple to unlock shooters phone not so simple
12/19/2017, ACM Tech News, Your Smartphone's Next Trick? Fighting Cybercrime
12/15/2017, New Atlas, Using smartphone photos as fingerprints could help fight...
06/12/2017, The Register, Who will save us from voice recog foolery...
06/09/2017, Edgy Labs, How This app Uses Your Smart Phone Compass Against...
06/08/2017, Net Dug Out, Voice hacking can be stopped using smartphone's compass
06/07/2017, Inverse, Your Phone Compass Can Stop Voice Hacks for This Reason
06/06/2017, Futurity, App could keep hackers from stealing your voice
06/06/2017, Hack Read, New App Will Stop Voice Hacks Using Smartphone Compass
06/06/2017, Phys.org, App uses smartphone compass to stop voice hacking
06/06/2017, Financial Express, Siri, WeChat may put you at voice hacking risk: Study
06/06/2017, Tech Radar, Your smartphone's compass can protect you from voice hacks
06/06/2017, NDTV, Siri, WeChat and Other Apps May Put You at Risk of...
06/05/2017, Science Daily, App uses smartphone compass to stop voice hacking
03/17/2016, Slate, Be Careful. Mistyping a Website URL Could Expose to Malware.
06/22/2014, Deepdotweb, Estimating hidden service traffic from DNS leaks
12/16/2011, msn.com, The Social Cloud: distributed computing services from...
12/15/2011, The Verge, Researchers testing a social-based distributed computing ...
12/15/2011, Data News, Grid computing met je vrienden (Grid computing with...)
12/14/2011, MIT Technology Review, The Imminent Rise of Social Cloud Computing
02/24/2011, Info Packets, Grad Students Theorize on How to Crash the Internet
02/23/2011, Infosec Island, Cyber Weapon Capable of Crashing the Internet?
02/15/2011, Minnesota Daily, U research exposes Web threat,
02/14/2011, Slashdot, How to crash the Internet
02/14/2011, Metro, Cyberweapon capable of wiping out internet developed
02/13/2011, The Register, Boffins devise 'cyberweapon' to take down internet,
02/12/2011, Gizmodo, The Cyberweapon That Could Take Down The Internet
02/12/2011, CBS News, New Cyberweapon Could Take Down the Internet
02/12/2011, Geekosystem, Cyberweapon to Take Down Internet... whenever
02/12/2011, ISSSource, Internet Ripe for Crash
02/11/2011, New Scientist, The cyberweapon that could take down the internet

Societies and Memberships

ACM (Student member since 2006, member since 2012, senior member since 2018).
IEEE (Student member since 2005, member since 2012, senior member since 2015).
ISOC (Internet Society; member since 2012).

References

Songqing Chen, Professor, George Mason University, sqchen@gmu.edu
Yongdae Kim, KAIST Chair Professor, KAIST, yongdaek@kaist.ac.kr
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